

**CLAIMS:**

1. A method for analyzing a network, comprising:
  - capturing a data trace representative of the network operation;
  - determining the network topology from the data trace;
  - dividing a duration of the trace into a first predetermined number of equal intervals;
  - calculating initial states for each device in the network topology for each of the intervals; and
  - displaying network analysis information based upon the initial states and the network topology to the user.
2. The method of claim 1, further comprising allowing the user to adjust a sample duration window.
3. The method of claim 2, further comprising:
  - dividing the duration of the sample duration window into a second predetermined number of equal intervals;
  - determining a calculated initial state that immediately precedes a first interval in the sample duration window;
  - calculating a valid starting state for each device on the network for the first interval in the sample duration based upon the determined preceding state; and
  - calculating initial states for each device on the network for each of the second predetermined intervals based upon the valid starting state and the data trace.
4. The method of claim 2, wherein adjusting the sample duration window comprises adjusting the granularity of a displayed sample analysis.
5. The method of claim 1, further comprising storing a snapshot of the network analysis information.

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6. The method of claim 3, further comprising storing a snapshot of the calculated initial states for each device over the second predetermined intervals.

7. The method of claim 3, further comprising generating errors and metrics representative of the sample duration window.

8. The method of claim 3, further comprising allowing a user to select the sample window and the second predetermined number of equal intervals.

9. The method of claim 8, further comprising allowing the user to select a plurality of parameters to be displayed in the sample window.

10. A method for adjusting the granularity of a network analysis sample while maintaining validity, comprising:

calculating states for each device in the network for a first number of predetermined equal intervals within a first sample window;

selecting a second sample window that is smaller than the first sample window;

selecting a second predetermined number of equal intervals for the second sample window;

determining an interval from the first number of predetermined intervals that immediately precedes an initial interval of the second predetermined number of equal intervals;

using the calculated state from the preceding interval to calculate a starting state for the initial interval; and

calculating state for each device in the network for each of the second predetermined number of equal intervals.

11. The method of claim 10, further comprising generating plot points for each of the second predetermined number of equal intervals.

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12. The method of claim 10, wherein calculating the state for each device comprises applying at least one expert to each interval of a network data trace.

13. The method of claim 10, further comprising allowing a user to select the second sample window and the second predetermined number of equal intervals.

14. The method of claim 10, further comprising capturing a data trace representative of the network.

15. The method of claim 14, further comprising determining a topology of the network from the captured data trace.

16. The method of claim 15, further comprising using the determined topology to calculate the states.

17. A method for adjusting a network analysis sample window while maintaining validity of the data represented in the adjusted sample window, comprising:

calculating states of each device on the network for a plurality of intervals in an initial sample window;

adjusting the initial sample window to a second window having a duration that is less than the initial sample window;

calculating states of each device on the network for a first sample in the second window, comprising:

determining an interval in the initial sample window that immediately precedes the first sample; and

calculating states of each device for the first sample by using the states of each device from the interval immediately preceding the first sample as a starting point; and

displaying selected parameters to a user based on the calculated states of each device in the second window via a graphical user interface.

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18. The method of claim 17, wherein calculating states of each device for the first sample further comprises starting at the interval immediately preceding the first sample and analyzing trace data from that time up to the start of the first sample.

19. The method of claim 18, wherein the data trace is collected by an analyzer positioned in communication with the network.

20. The method of claim 17, wherein displaying comprises generating plot points for the second window.

21. The method of claim 20, further comprising allowing a user to select the duration of the second window and a number of sample intervals in the second window.